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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/769,721	01/25/2001	Kurt E. Spears	10002651-1	5042

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EXAMINER

AGGARWAL, YOGESH K

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 01/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/769,721

Applicant(s)

SPEARS ET AL.

Examiner

Yogesh K Aggarwal

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 09/14/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Audaire et al. (US Patent # 5,113,263).

[Claim 1]

Audaire teaches an array of photosensors (figure 5), to light, a first time and transferring charges, from a block of photosensors (12a-12d) in the array of photosensors, to a charge shift register (44 constitutes 42a-d), wherein the block comprises less than all the photosensors, and only the charges from the block are transferred (col. 9 lines 31-36 disclose that charges only from the block of photosensors 12a-12d to the multiplexer 44 are transferred which is less than all the photosensors). Audaire further teaches exposing, the array of photosensors, to light, a second time by taking another photograph and transferring charges, from the block of photosensors (12a-12d) in the array of photosensors, to the charge shift register (44), where only the charges from the block are transferred, so that the charges from the block of photosensors, from more than one exposure, are multiplexed onto the charge shift register (col. 10 lines 34-43, figure 7a).

[Claim 2]

Audaire teaches transferring charges from a block of contiguous photosensors (12a-12d).

[Claim 7]

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Audaire teaches a method of scanning, comprising transferring charges, from a block of photosensors (12a-12d) in an array of photosensors (figure 4 shows the array of detectors), to a charge shift register (figure 4, element 34 constitutes 32a-32d), wherein the block comprises less than all the photosensors (12a-12d is less than all the photosensors), and only the charges from the block are transferred, repeating the step of transferring charges until the charge shift register is filled with charges only from the block of photosensors (Prior to each photograph, register 32a is empty, 32b contains the signal recorded by the stage 32a during the last photograph and coming from detector 12a and so on (col. 3 lines 34-43). Following each photograph, the stages 32a-32d contain signals from the detectors 12a-12d and are summed with signals from the previous photographs (col. 3 lines 44-49). Charges are then shifted before the next photograph, making the stage 32a empty again. The cycle repeats (col. 3 lines 50-57)).

3. Claim 5 is rejected under 35 U.S.C. 102(b) as being anticipated by Yu (US Patent # 5,345,319).

[Claim 5]

Yu teaches a method of scanning comprising exposing, first (figure 2, blue 5) and second arrays (figure 2, red 3) of photosensors to light, transferring charges, from a first contiguous block of photosensors (the blue color array comprises a contiguous first block of photosensors) in the first array of photosensors (figure 2, blue 5), to a charge shift register (figure 2, element 1), wherein the block comprises less than all the photosensors (blue color pixels comprise less than the total number of all the photosensors RGB), and only charges from the first block are transferred; transferring charges from a second contiguous block of photosensors (the red color array comprises a contiguous second block of photosensors) in the second array of photosensors

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(figure 2, red 3), to the charge shift register (figure 2, element 1, it is noted that the charges are transferred to the same charge shift register as the first block), where only the charges from the second block are transferred, so that charges from contiguous block from more than one array of photosensors are multiplexed onto the charge shift register (col. 3 line 64- col. 4 line charges from the first block of photosensors comprised of blue color pixels in a first array of photosensors 5 transfer charges to the charge shift registers 1 and the block of red pixels 3 comprise less than all the photosensors RGB and these charges are multiplexed in the SHIFT register 1).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Audaire et al. (US Patent # 5,113,263).

[Claim 3]

Audaire does not explicitly teach transferring charges from alternate photosensors within a block of contiguous photosensors. However Official Notice is taken of the fact that it is notoriously well known transferring charges from alternate photosensors within a block of contiguous photosensors in order to have a faster readout. Therefore taking the combined teachings of Audaire and Official Notice, it would have been obvious to one skilled in the art at the time of

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the invention to have been motivated to transfer charges from alternate photosensors within a block of contiguous photosensors in order to have a faster readout.

6. Claims 4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Audaire et al. (US Patent # 5,113,263) as applied to claim 1 and 7 above and in further view of Hynecek (US Patent # 6,459,077).

[Claims 4 and 8]

Audaire teach the limitations of claim 1 and 7 but fails to teach "... shifting charges, within the charge shift register, at a lower than normal shift rate". However Hynecek teaches that these limitations are well known and used in the art (col. 3 lines 35-43). Therefore taking the combined teachings of Audaire and Hynecek it would have been obvious to one skilled in the art at the time of the invention to have been motivated to shift charges at a lower than normal shift rate. The benefit of doing so would be to improve the bucket brigade charge transfer efficiency to be similar to that expected of typical CCD devices as taught in Hynecek (col. 3 lines 35-37).

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yu (US Patent # 5,345,319) as applied to claim 5 above and in further view of Hynecek (US Patent # 6,459,077).

[Claim 6]

Yu teach the limitations of claim 1 and 7 but fails to teach "... shifting charges, within the charge shift register, at a lower than normal shift rate". However Hynecek teaches that these limitations are well known and used in the art (col. 3 lines 35-43). Therefore taking the combined teachings of Yu and Hynecek it would have been obvious to one skilled in the art at the time of the invention to have been motivated to shift charges at a lower than normal shift rate. The

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benefit of doing so would be to improve the bucket brigade charge transfer efficiency to be similar to that expected of typical CCD devices as taught in Hynecek (col. 3 lines 35-37).

Allowable Subject Matter

8. Claim 9 is allowed.

9. The following is a statement of reasons for the indication of allowable subject matter:

The prior art fails to suggest fairly a method of scanning comprising exposing, first and second arrays of photosensors to light; transferring charges, from a first block of photosensors in the first array of photosensors, directly to a charge shift register without any intervening charge shift registers, wherein the block comprises less than all the photosensors, and only charges from the first block are transferred: shifting, in the charge shift register, the charges from the first block of photosensors transferring charges, from a second block of photosensors in the second array of photosensors, directly to the charge shift register without any intervening charge shift registers, into the stages of the charge shift register previously occupied by the charges from the first block of photosensors before shifting, where only the charges from the second block are transferred so that charges from blocks from more than one array of photosensors are multiplexed onto the charge shift register.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yogesh K Aggarwal whose telephone number is (703) 305-0346.

The examiner can normally be reached on M-F 9:00AM-5:30PM.

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10. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Christensen can be reached on (703) 308-9644. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

YKA
January 21, 2005


TUAN HO
PRIMARY EXAMINER